CLAIMS

1. Security reversible-key with at least three coding - / tumbler pin rows (A1, A2, A3), which are also located on the flat sides of the key (S), with an assigned cylinder (Z) with pin rows of pairs of tumbler pins, consisting of tumbler pins

5   and counter pins at the positions of the tumbler pin rows of a given bore pattern, characterized in

that the key has a blocking groove BN, which runs parallel to the key axis (x) from the tip of the key to at least the first position (P1) of a tumbler pin row on the key,

10 that the blocking groove has a coded blocking depth (B1, B2, B3),

that in the assigned cylinder at least at the rearmost coding position (P1) a pair of tumbler pins corresponding to the blocking groove BN with a blocking tumbler pin BZ and an extended blocking counter pin BG is foreseen,

so that the blocking counter pin impinges on the cylinder housing (10) if the

15 blocking groove is not deep enough and with this the complete insertion of a key with an insufficiently deep blocking groove is blocked by the pair of blocking tumbler pins and whereby the blocking tumbler pin BZ with the blocking counter pin BG following the insertion of the key at the position (P1) is also utilized as a coding tumbler pin with coding steps (C1, C2, C3, C4) with

20 respect to the turning of the cylinder.

2. Key in accordance with claim 1, characterized in that at least four rows of tumbler pins (A1 - A4) are foreseen.

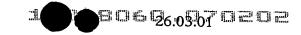3. Key in accordance with claim 1, characterized in that at least two different codings (Cod1, Cod2) are foreseen.

4. Key in accordance with claim 1, characterized in that coding positions (Pi) from two different bore patterns (R, L) are foreseen.

5. Key in accordance with claim 1, characterized by a blocking groove, which runs to at least the two positions (P1, P2) at the very front of a coding row (A2) and by blocking tumbler pins BZ1, BZ2 and blocking counter pins BG1, BG2 corresponding to these positions, with coded step depths of these at least two positions at the very front.

6. Key in accordance with claim 5, characterized in that the blocking groove has at least two differently shaped sectors BN1, BN2.

7. Key in accordance with claim 1, characterized in that the blocking groove extends over more than one coding position and whereby the depth (tb) of the blocking groove remains the same from one position (P1) to the next position (P2) or gets smaller.

8. Key in accordance with claim 1, characterized in that the blocking groove extends over more than one coding position and whereby the width (bb) of the blocking groove remains the same from one position (P1) to the next position (P2) or gets smaller.

9. Key in accordance with claim 1, characterized in that at more than one row of tumbler pins (A1, A2) respectively one blocking groove each with assigned pairs of blocking tumbler pins is foreseen.

10. Key in accordance with claim 1, characterized in that as an additional security element at the tip of the key a rising control face KF is located, which pushes an assigned control pin KS out of the way, whereby the control pin KS prevents the insertion of a key without a control face KF.

5   11. Key in accordance with claim 10, characterized in that the control pin KS is implemented as a flat pin (23), which additionally carries out a flank control at a narrow coding milling (Cod2).

       12. Key in accordance with claim 1, characterized in that in a row of tumbler pins (A2) the following security elements are located: Blocking code (BC), second

10   coding (Cod2), insertion blocking system by means of control face (KF) and control pin (KS) as well as flank control by means of a flat pin (23).

       13. Locking system with security reversible keys for locking systems with at least three coding - / tumbler pin rows (A1, A2, A3), which are also located on the flat sides of the keys (S), with assigned cylinders (Z) with pin rows of pairs of

15   tumbler pins, consisting of tumbler pins and counter pins at the positions of a given bore pattern and with at least two additional safety elements, characterized in that at least two areas on the keys are defined, whereby in a first area G1 at least two additional security elements with a higher degree of manufacturing difficulty are foreseen and in the second area G2 a more simple

20   basic coding (Cod1) is foreseen, and whereby with the first area G1 an unequivocal segmentation into independent market areas (M1, M2, ...) is defined and whereby the first area G1 as an additional security element has a blocking code (BC), i.e., the keys have a blocking groove BN, which runs parallel to the axis of the key (x) from the tip of the key to at least the first
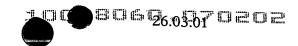
position (P1) of a tumbler pin row on the key, the blocking groove has a coded blocking depth (B1, B2, B3), in the assigned cylinder at least at the rearmost coding position (P1) a pair of tumbler pins with a blocking tumbler pin BZ and an extended blocking counter pin BG corresponding to the blocking groove BN are foreseen, so that the blocking counter pin BG impinges on the cylinder housing (10), if the blocking groove is not deep enough and therefore the complete insertion of a key with an insufficiently deep blocking groove is blocked by the pair of blocking tumbler pins, and whereby the blocking tumbler pin BZ with the blocking counter pin BG after the insertion of the key at the position (P1) is also utilized as a coding tumbler pin with coding steps (C1, C2, C3, C4) with respect to the turning of the cylinder.

14. Locking system in accordance with claim 13, characterized in that as security elements in the first area G1 a second coding (Cod2), an insertion blocking by means of control faces (KF) on the key and assigned control pin (KS) in the cylinder, a flank control by means of a flat tumbler pin (23) and a blocking code (BC) are foreseen.

15. Locking system in accordance with claim 13, characterized in that on the keys in areas different bore patterns (R, L) are foreseen.

16. Locking system in accordance with claim 13, characterized in that at least three security elements are foreseen in the first area G1.

17. Locking system in accordance with claim 13, characterized in that as security elements a second coding (Cod2) with a narrow milling is foreseen.

18. Locking system in accordance with claim 13, characterized in that all security elements of the area G1 are affixed in one coding row (A2).

19. Method for the manufacturing of keys and cylinders of a locking system with at least two areas (G1, G2) on the keys (S) in accordance with claim 13,
5   characterized in that first the first area G1 on the keys is manufactured, resp., controlled and authorized in a central place of manufacture (H1), and that the coding (Cod1) of the keys of the second area G2 and the equipping of the cylinders with corresponding pins subsequently is able to take place decentralized at a local representative (H2).

10   20. Method in accordance with claim 19, characterized in that the manufacturing takes place in at least two steps, resp., at different locations, whereby first variables (Vi) with a higher degree of difficulty (HS) of the area G1 are manufactured at a central location and subsequently variables with a lower degree of difficulty of the area G2 are manufactured decentralized or locally.

15   21. Method in accordance with claim 19, characterized in that the manufacturing of the keys takes place in at least three steps, whereby first the first area G1 with variables (Vi) of the highest degree of difficulty is manufactured centrally (H1), thereupon a further area (G1/2) with variables with a lower degree of difficulty is manufactured regionally (H1/2) and finally the coding with the
20   lowest degree of difficulty of the area G2 is manufactured locally at the place of application (H2).

22. Method in accordance with claim 19, characterized in that the manufacturing of the area G1 is also able to take place decentralized, whereby the manufacturing programmes and the authorization (aut) for this are controlled and checked from a central location SS (system owner).

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